

Comparisons of Job Characteristics

Focus Occupation: **Microbiologists (19-1022)**

Associated Occupation: **Environmental Scientists and Specialists, Including Health (19-2041)**

Compare Knowledge

Compare Skills

Compare Abilities

Compare Detailed Work Activities

Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 68

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Environmental Scientists and Specialists, Including Health (19-2041)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Mathematics	9.2	15.5	12.8	< Expanded education and/or training may be required
Chemistry	4.8	14.9	15.2	0 Current knowledge level may be sufficient
Biology	3.7	14.8	24.1	>> Current knowledge level is likely more than sufficient
Law and Government	5.9	13.5	6.1	<< Extensive education and/or training may be required
Geography	3.9	12.7	4.0	<< Extensive education and/or training may be required
Engineering and Technology	5.7	12.1	6.1	<< Extensive education and/or training may be required
Physics	4.3	10.5	6.2	<< Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 96

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Environmental Scientists and Specialists, Including Health (19-2041)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Reading Comprehension	10.7	16.1	15.5	0 Current skill level may be sufficient
Science	4.5	15.7	17.0	0 Current skill level may be sufficient
Writing	9.2	14.4	14.8	0 Current skill level may be sufficient
Complex Problem Solving	9.1	13.4	11.5	< A higher skill level may be required

Judgment and Decision Making	9.4	13.1	12.4	0	Current skill level may be sufficient
Active Learning	8.7	13.0	14.7	>	Skill level is likely sufficient
Mathematics	6.2	12.2	11.0	<	A higher skill level may be required
Coordination	9.1	11.8	10.3	<	A higher skill level may be required
Learning Strategies	7.2	11.7	12.2	0	Current skill level may be sufficient
Systems Analysis	6.5	10.6	10.6	0	Current skill level may be sufficient
Operations Analysis	5.0	9.3	8.8	0	Current skill level may be sufficient
Programming	2.2	6.3	4.7	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Environmental Scientists and Specialists, Including Health (19-2041)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Inductive Reasoning	10.2	16.5	18.0	0	Current ability level may be sufficient
Written Comprehension	11.0	16.3	16.5	0	Current ability level may be sufficient
Problem Sensitivity	11.1	15.8	16.1	0	Current ability level may be sufficient
Deductive Reasoning	10.6	15.1	15.7	0	Current ability level may be sufficient
Written Expression	9.8	14.4	15.5	0	Current ability level may be sufficient
Category Flexibility	9.0	13.0	16.0	>	Current ability level is likely sufficient
Information Ordering	9.9	12.9	13.9	0	Current ability level may be sufficient
Mathematical Reasoning	6.3	12.2	11.5	0	Current ability level may be sufficient
Number Facility	6.3	11.9	11.0	0	Current ability level may be sufficient
Flexibility of Closure	7.8	11.6	13.6	>	Current ability level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 88

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Environmental Scientists and Specialists, Including Health (19-2041)

Work Activities	Exclusivity of Activity
Adhere to safety procedures	12
Advise clients or customers	19
Advise governmental or industrial personnel	28
Analyze biological research, test, or analysis data	70
Analyze ecosystem data	69

Analyze scientific research data or investigative findings	27
Classify plants, animals, or other natural phenomena	69
Collect scientific or technical data	30
Collect statistical data	47
Communicate technical information	4
Conduct analyses or tests of organic compounds	71
Conduct field research or investigative studies	52
Conduct laboratory research or experiments	57
Conduct standardized qualitative laboratory analyses	62
Conduct standardized quantitative laboratory analyses	62
Confer with engineering, technical or manufacturing personnel	25
Confer with research personnel	50
Confer with scientists	54
Develop new products based on scientific research results	71
Develop or maintain databases	30
Develop plans for programs or projects	31
Develop policies, procedures, methods, or standards	21
Develop scientific or mathematical hypotheses, theories, or laws	62
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Direct and coordinate scientific research or investigative studies	27
Direct implementation of new procedures, policies, or programs	60
Examine biological or other material specimens under microscope	73
Explain complex mathematical information	30
Follow infectious materials procedures	52
Follow microbiology procedures	74
Follow safe waste disposal procedures	50
Make decisions	24
Make presentations	13
Plan scientific research or investigative studies	48
Prepare reports	8
Prepare sample for laboratory testing, analysis, or microscopy	74
Prepare technical reports or related documentation	22
Record test results, test procedures, or inspection data	48
Resolve engineering or science problems	46
Use biological research techniques	68
Use biological testing instruments	73
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use health or sanitation standards	62
Use knowledge of investigation techniques	16
Use laboratory equipment	60
Use library or online Internet research techniques	21
Use mathematical or statistical methods to identify or analyze problems	30
Use microscope	71
Use pollution control techniques	62
Use quantitative research methods	35

Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17
Write scholarly or technical research papers	36

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 50

Focus Occupation: Microbiologists (19-1022)

Associated Occupation: Environmental Scientists and Specialists, Including Health (19-2041)

Tools and Technologies	Exclusivity
Cameras	2
Chemical evaluation instruments and supplies	10
Chromatographic measuring instruments and accessories	16
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Electrical measuring and testing equipment	7
Electrochemical measuring instruments and accessories	9
Gas analyzers and monitors	10
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Light and wave generating and measuring equipment	4
Network applications software	1
Sampling equipment	12
Spectroscopic equipment	10

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.